



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,482	07/21/2003	Kristy A. Campbell	M4065.0724/P724	4978
24998	7590	01/25/2005		
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP 2101 L Street, NW Washington, DC 20037			EXAMINER LANDAU, MATTHEW C	
			ART UNIT 2815	PAPER NUMBER

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/622,482

Applicant(s)

CAMPBELL, KRISTY A.

Examiner

Matthew Landau

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-172 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-172 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/18/03, 7/27/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species I in the reply filed on November 2, 2004 is acknowledged. The traversal is on the ground(s) that no undue burden exists to examine all claims in the same application. This argument is found persuasive. The restriction requirement is hereby withdrawn and all pending claims will be examined.

Information Disclosure Statement

Reference "CQ", found in the information disclosure statement filed April 7, 2004, fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered. The general statement of relevance provided in Appendix A is not sufficient.

Claim Objections

Claims 1, 33, 50, 52, 53, and 146 are objected to because of the following informalities:

Regarding claim 1, the limitations "said metal-containing layer" and "said silver layer" should be changed to "said at least one metal-containing layer" and "said at least one silver layer".

Regarding claim 33, the limitation "second glass layers is a formed" should be changed to "second glass layers is [[a]] formed".

Art Unit: 2815

Regarding claim 50, claims 48 and 50 are identical. It is suggested the limitation "said second glass layer" in claim 50 be changed to "said first [[second]] glass layer".

Regarding claims 52 and 53, claims 41 and 42 are identical to claims 52 and 53. Claims 52 and 53 should be cancelled.

Regarding claim 146, there is insufficient antecedent basis for "said first and second silver layers".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 118 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 118, the limitation "said layer" renders the claim indefinite since there are multiple layers claimed.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

Art Unit: 2815

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-88, and 112-129 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 76-87 of copending Application No. 10/819315. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is generally held that a broad, generic claim is unpatentable over a narrow, species claim. Regarding claim 76 of the instant application, it is considered that the second chalcogenide glass layer of claim 76 of 10/819315 is the claimed diffusion control layer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-172 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 30-137 of copending Application No. 10/120521 in view of Campbell et al. (US Pat. 6,813,178, hereinafter Campbell). The claims of 10/120,521 indicated above recite all the limitations of the respective claims of the instant application (possibly in a more narrow scope) except a silver layer adjacent the metal containing layer and in contact with the second glass layer. Figure 1b of Campbell discloses a silver layer 9 between a metal containing layer 6 and a second chalcogenide glass layer 8. In view of such teaching, it would have been obvious to the ordinary artisan at the time

Art Unit: 2815

the invention was made to modify the invention of 10/120521 by using the silver layer of Campbell for the purpose of limiting the Ag source for long-term temperature stability and endurance (col. 4, lines 61-63 of Campbell). Note that it is generally held that a broad, generic claim is unpatentable in view of a narrow, species claim.

This is a provisional obviousness-type double patenting rejection.

Claims 130-147 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 89 of copending Application No. 10/230201 in view of Campbell. Claim 89 of 10/230201 recites all the limitations of claim 130 of the instant application (in a more narrow scope) except a silver layer adjacent the metal containing layer and in contact with the second glass layer. Figure 1b of Campbell discloses a silver layer 9 between a metal containing layer 6 and a second chalcogenide glass layer 8. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of claim 89 of 10/230201 by using the silver layer of Campbell for the purpose of limiting the Ag source for long-term temperature stability and endurance (col. 4, lines 61-63 of Campbell). Note that it is generally held that a broad, generic claim is unpatentable in view of a narrow, species claim.

This is a provisional obviousness-type double patenting rejection.

Claims 112-129 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 71 of copending

Art Unit: 2815

Application No. 10/800707 in view of Campbell. Claim 71 of 10/230201 recites all the limitations of claim 112 of the instant application (in a more narrow scope) except a silver layer adjacent the metal containing layer and in contact with the second glass layer. Figure 1b of Campbell discloses a silver layer 9 between a metal containing layer 6 and a second chalcogenide glass layer 8. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of claim 71 of 10/800707 by using the silver layer of Campbell for the purpose of limiting the Ag source for long-term temperature stability and endurance (col. 4, lines 61-63 of Campbell). Note that it is generally held that a broad, generic claim is unpatentable in view of a narrow, species claim.

This is a provisional obviousness-type double patenting rejection.

Claims 1-56 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 30 of copending Application No. 10/410567 in view of Campbell. Claim 30 of 10/410567 recites all the limitations of claims 1 and 33 of the instant application (in a more narrow scope) except a silver layer adjacent the metal containing layer and in contact with the second glass layer. Figure 1b of Campbell discloses a silver layer 9 between a metal containing layer 6 and a second chalcogenide glass layer 8. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of claim 30 of 10/410567 by using the silver layer of Campbell for the purpose of limiting the Ag source for long-term temperature stability and endurance (col. 4, lines 61-63 of Campbell). Note that it is generally held that a broad, generic claim is unpatentable in view of a narrow, species claim.

Art Unit: 2815

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 9-11, 15-21, 23, 25-27, 29-31, 33, 34, 38-42, 46, 47, 49-55, 57-60, 64, 68, 70-74, 76-80, 84-87, 112-120, 124, 125, 127, 128, 130-135, 137, 139, 140, 144, and 145-147 are rejected under 35 U.S.C. 102(e) as being anticipated by Campbell.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, 4, 5, 11, and 23, Figure 1b of Campbell discloses a resistance variable memory element comprising: at least one chalcogenide glass layer 4, at least one metal-containing layer 6 (silver-selenide), at least one silver layer 9 provided adjacent to said metal-containing layer, and a second chalcogenide glass layer 8, said metal-containing layer and said

Art Unit: 2815

silver layer being provided between said at least one chalcogenide glass layer and said at least one other glass layer.

Regarding claims 2 and 3, it is considered that chalcogenide glass layers 4 and 8 each consist of two layers. Since glass layers 4 and 8 are amorphous, it can be considered that layers 4 and 8 each consist of two layers (upper and lower layers). This interpretation is based upon the fact that amorphous materials do not have distinct grain boundaries. Therefore, if an amorphous layer were deposited on top of another amorphous layer with the same composition, a cross sectional view of those two layers would be identical to that of one thick layer.

Regarding claims 4 and 5, Figure 1b of Campbell discloses said at least one metal-containing layer comprises silver-selenide (col. 5, lines 53-56).

Regarding claims 9 and 10, Campbell discloses said at least one chalcogenide glass layer 4 comprises a material having the stoichiometric formula $\text{Ge}_{40}\text{Se}_{60}$ (col. 4, lines 28-31).

Regarding claims 15, 25, and 26, Campbell discloses the other glass layer 8 contains Ge and Se (col. 5, lines 25-30). It is inherent that at least some silver will diffuse from silver layer 9 into layer 8.

Regarding claims 16, 17, and 27, Campbell discloses said at least one metal-containing layer 6 has a first thickness (600 angstroms) (col. 5, lines 15-17) and said at least one other glass layer 8 has a second thickness of 150 angstroms (col. 5, lines 32 and 33). Therefore, a thickness ratio of said first thickness to said second thickness is 4:1.

Regarding claims 18 and 19, Campbell discloses said at least one chalcogenide glass layer 4 has a thickness of 150 angstroms (col. 4, lines 33-35).

Art Unit: 2815

Regarding claims 20 and 21, Campbell discloses said at least one metal-containing layer 6 has a first thickness (600 angstroms) (col. 5, lines 15-17) and said at least one chalcogenide glass layer 4 has a second thickness (250 angstroms) (col. 4, lines 33-35). Therefore, a thickness ratio of said first thickness to said second thickness is 2.4:1.

Regarding claim 29, Campbell discloses said at least one metal containing layer 6 has a thickness (600 angstroms) (col. 5, line 17) larger than a thickness of each of said at least one chalcogenide glass layer and said at least one other glass layer (150 angstroms each) (col. 4, lines 33-35 and col. 5, lines 32-34).

Regarding claim 30, the product-by-process limitation “wherein said silver layer is an evaporated silver layer” does not structurally or patentably distinguish the claimed invention over the prior art.

Regarding claim 31, Campbell discloses the silver layer 9 has a thickness of 200 angstroms (col. 5, lines 57-59).

Regarding claims 33, 34, 38-40, and 57-60, 64, 76, 77, 79, 80, 112, 113, 116, 120, 130-132, 135, 140, and 145, Figure 1b of Campbell discloses a resistance variable memory element comprising: a body, said body comprising a first chalcogenide glass layer 4 ($\text{Ge}_{40}\text{Se}_{60}$) (col. 4, lines 28-31) in contact with at least one silver-selenide layer 6, and at least one silver layer 9 in contact with said silver-chalcogenide layer, said silver layer being in contact with a second chalcogenide glass layer 8, wherein at least one of said first and second glass layers is formed of a chalcogenide glass material; and a first electrode 2 and a second electrode 10 in respective contact with said first and second glass layers. Regarding claims 64, 76, 77, 120, and 145, it is considered that the second glass layer 8 is a diffusion control layer. The limitation “for

Art Unit: 2815

controlling diffusion of elements..." is merely a recitation of intended use that does not structurally/patentably distinguish the claimed invention over the prior art. Layer 8 of Campbell is capable of preventing diffusion. Regarding claim 112, Campbell also discloses a method of making the above device. Regarding claim 130, Figure 9 of Campbell discloses a processor 544; and a memory circuit 548, which includes the above memory element.

Regarding claims 41, 42, 46, 52, 53, 68, 71, 72, 84, 85, 114, 115, 118, 119, 124, 133, 134, 139, 144, and 134, Campbell discloses the first and second glass layers (4 and 8, respectively) comprise germanium and selenium (col. 4, lines 28-31 and col. 5, lines 25-30). It is inherent that at least some silver will diffuse from silver layer 9 into layer 8.

Regarding claim 47, Campbell discloses said silver-chalcogenide layer 6 has a first thickness (600 angstroms) (col. 5, lines 15-17) and said second glass layer 8 has a second thickness of 150 angstroms (col. 5, lines 32 and 33). Therefore, a thickness ratio of said first thickness to said second thickness is 4:1.

Regarding claims 49 and 50, Campbell discloses said silver-chalcogenide layer 6 has a first thickness (600 angstroms) (col. 5, lines 15-17) and said first glass layer 4 has a second thickness (250 angstroms) (col. 4, lines 33-35). Therefore, a thickness ratio of said first thickness to said second thickness is 2.4:1.

Regarding claims 51 and 125, Campbell discloses said silver-chalcogenide layer 6 has a thickness (600 angstroms) (col. 5, line 17) larger than a thickness of each of first and second glass layers (4 and 8, respectively) (150 angstroms each) (col. 4, lines 33-35 and col. 5, lines 32-34).

Art Unit: 2815

Regarding claims 54, 73, 86, 127, and 146, the product-by-process limitation “wherein said silver layer is an evaporated silver layer” does not structurally or patentably distinguish the claimed invention over the prior art.

Regarding claims 55, 74, 87, 128, and 147, Campbell discloses the silver layer 9 has a thickness of 200 angstroms (col. 5, lines 57-59).

Regarding claims 70 and 137, it is considered that the chalcogenide glass layer 4 of Campbell consists of two layers. Since glass layer 4 is amorphous, it can be considered that layer 4 consists of two layers (upper and lower layers). This interpretation is based upon the fact that amorphous materials do not have distinct grain boundaries. Therefore, if an amorphous layer were deposited on top of another amorphous layer with the same composition, a cross sectional view of those two layers would be identical to that of one thick layer.

Regarding claim 78, Figure 1b of Campbell discloses a metal-containing electrode in contact with the diffusion control layer 8. The limitation “wherein said diffusion control layer slows migration...” is merely a recitation of intended use that does not structurally/patentably distinguish the claimed invention over the prior art.

Regarding claim 117, Figure 1b of Campbell discloses the layers of said chalcogenide glass material 4, said silver-selenide layer 6, and said silver layer 9 alternate with each other. Note that the claim does not specify that there must be more than one of each layer.

Claims 1-3, 9, 10, 15, 23, 25, 26, 30, 32, 130-135, 137, 139, and 144-146 are rejected under 35 U.S.C. 102(a) as being anticipated by Moore (US PGPub 2003/0038301).

Art Unit: 2815

Regarding claims 1 and 23, Figures 1-6 of Moore disclose a resistance variable memory element comprising: at least one chalcogenide glass layer 105, at least one metal-containing layer (W portion of 110), a silver layer (upper Ag portion of 110) provided adjacent to said metal-containing layer, and at least one other glass layer (a second chalcogenide glass layer) 129, said metal-containing layer and said silver layer being provided between said at least one chalcogenide glass layer and said at least one other glass layer.

Regarding claims 2, 3, and 137, Moore discloses said at least one chalcogenide glass layer 105 and said other glass layer 129 comprise a plurality of chalcogenide glass layers. Since glass layers 105 and 129 are amorphous, it can be considered that layers 105 and 129 each consist of multiple layers. This interpretation is based upon the fact that amorphous materials do not have distinct grain boundaries. Therefore, if an amorphous layer were deposited on top of another amorphous layer with the same composition, a cross sectional view of those two layers would be identical to that of one thick layer.

Regarding claims 9, 10, 131, and 132, Figure 6 of Moore discloses said first chalcogenide glass layer 105 and said second chalcogenide glass layer 129 comprise a material having a formula Ge_3Se_7 . Note that Ge_3Se_7 is equivalent to $\text{Ge}_{30}\text{Se}_{70}$, which is considered to be "about" $\text{Ge}_{40}\text{Se}_{60}$.

Regarding claims 15 and 144, Figure 6 of Moore discloses said at least one other glass layer 129 comprises a combination of germanium, silver, and selenium.

Regarding claims 25, 26, and 139, Figure 6 of Moore discloses a chalcogenide glass layer 105 contains a metal dopant (Ag).

Art Unit: 2815

Regarding claims 30 and 146, the product-by-process limitation “wherein said silver layer is an evaporated silver layer” does not structurally or patentably distinguish the claimed invention over the prior art.

Regarding claim 32, Figure 6 of Moore discloses a second silver layer (lower Ag portion of 110) located on a side of said metal-containing layer (W portion of 110) opposite the side on which said at least one silver layer (upper Ag portion of 110) is located.

Regarding claims 130 and 135, Figure 8 of Moore discloses a processor 302 and a memory circuit 308 connected to said processor, said memory circuit including a resistance variable memory element. Figures 1-6 of Moore disclose a resistance variable memory element comprising at least one metal-containing layer (W portion of 110), at least one silver layer (upper Ag portion of 110) in contact with said at least one metal-containing layer, at least one chalcogenide glass layer 105, at least one other glass layer (a second chalcogenide glass layer) 129, said metal-containing layer and said silver layer being provided between said at least one chalcogenide glass layer and said at least one other layer.

Regarding claims 133 and 134, Figure 6 of Moore discloses a glass layer 129 contains a metal dopant (Ag).

Regarding claim 145, it is considered that the second glass layer 129 of Moore is a diffusion control layer. The limitation “for controlling diffusion of elements...” is merely a recitation of intended use that does not structurally/patentably distinguish the claimed invention over the prior art. Layer 129 of Moore is capable of preventing diffusion.

Claims 1, 22, 130 and 138 are rejected under 35 U.S.C. 102(a) as being anticipated by Moore. The following rejections are based upon an alternate interpretation of Moore.

Regarding claim 1, Figures 1-6 of Moore disclose a resistance variable memory element comprising: at least one chalcogenide glass layer (lower portion of 105), at least one metal-containing layer (upper portion of 105), a silver layer (lower Ag portion of 110) provided adjacent to said metal-containing layer, and at least one other glass layer 129, said metal-containing layer and said silver layer being provided between said at least one chalcogenide glass layer and said at least one other glass layer. Since glass layer 105 is amorphous, it can be considered that layer 105 consists of multiple layers. This interpretation is based upon the fact that amorphous materials do not have distinct grain boundaries. Therefore, if an amorphous layer were deposited on top of another amorphous layer with the same composition, a cross sectional view of those two layers would be identical to that of one thick layer. Note that this interpretation also applies to the rejection of claim 130.

Regarding claims 22 and 138, based on the above interpretation, it can be considered said metal-containing layer (upper portion of 105) comprises a plurality of stacked metal-containing layers.

Regarding claim 130, Figure 8 of Moore discloses a processor 302 and a memory circuit 308 connected to said processor, said memory circuit including a resistance variable memory element. Figures 1-6 of Moore disclose a resistance variable memory element comprising at least one metal-containing layer (upper portion of 105), at least one silver layer (lower Ag portion of 110) in contact with said at least one metal-containing layer, at least one chalcogenide glass layer (lower portion of 105), at least one other glass layer 129, said metal-containing layer and said silver layer being provided between said at least one chalcogenide glass layer and said at least one other layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-21, 27, 28, 31, and 147 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore (based on first interpretation).

Regarding claims 16 and 17, Moore does not disclose the other glass layer 129 has a thickness of 150 angstroms. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Moore by using a thickness of about 150 angstroms, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 18 and 19, Moore does not disclose the chalcogenide glass layer 105 has a thickness of 150 angstroms. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Moore by using a thickness of about 150 angstroms, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Art Unit: 2815

Regarding claims 20 and 21, it is inherent in the device of Moore that the metal-containing layer (W portion of 110) has a first thickness and said chalcogenide glass layer 105 has a second thickness. Moore does not disclose a thickness ratio of said first thickness to said second thickness is between about 3.3:1 to about 2:1. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Moore by using a thickness ratio of about 3.3:1 to about 2:1, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 27 and 28, it is inherent in the device of Moore that the metal-containing layer (W portion of 110) has a first thickness and said other glass layer 129 has a second thickness. Moore does not disclose a thickness ratio of said first thickness to said second thickness is between about 3.3:1 to about 2:1. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Moore by using a thickness ratio of about 3.3:1 to about 2:1, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 31 and 147, Moore does not disclose the first and second silver layers each have a thickness of about 50-250 angstroms. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Moore by using a thickness of about 50-250 angstroms, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Art Unit: 2815

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (571) 272-1731.

The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Matthew C. Landau

Examiner

January 18, 2005

Tom Thomas
TOM THOMAS
SUPERVISOR
JAN 18 2005